

REMARKS

Favorable reconsideration of this application is respectfully requested in view of the following remarks.

Submitted with this Amendment is an Information Disclosure Statement citing excerpts from a book entitled "Schlieren and Shadowgraph Techniques, Visualizing Phenomena in Transparent Media." The cited excerpt is from a corrected second printing of the book, which appears to have been published in 2006. That edition year is subsequent to the filing date of the present application. However, information on the inside of the front cover of the book suggests there was a first printing of the book in 2001. Applicant is in the process of trying to obtain a copy of the 2001 edition of the book. At this time, Applicants have no reason to believe that the excerpt cited in the Information Disclosure Statement is not a part of the 2001 edition. In the event additional information relevant to this point is discovered and is found to be contrary to this understanding, such information will be conveyed to the Examiner.

The Examiner is kindly asked to consider the document cited in that Information Disclosure Statement.

By this Amendment, independent Claim 1 is canceled and the subject matter recited in Claim 1 is incorporated into Claim 10. In addition, new independent Claims 22 and 25 are presented for consideration.

Claim 10 recites a method of determining the optical quality of a glazing that includes at least one area having a reduced light transmission. The method comprises illuminating the glazing with a light source to form a shadowgraph image of the glazing on a virtual image plane located between the light source and a camera, focusing the camera onto the virtual image plane, measuring the

illumination of the glazing at a plurality of measurement points arranged in an array extending over the glazing, determining any deviation in illumination at those measurement points from a desired value at each measurement point, and omitting from the array of measurement points the at least one area of reduced light transmission and ignoring the optical quality of the glazing in the area of reduced light transmission.

The Official Action primarily relies upon the disclosure in U.S. Patent No. 5,694,479 to Guering. This reference describes a process for measuring the optical quality of a glazing. The method involves recording and processing a shadowgraph image of the glazing which is then used to construct a reference image, with corresponding points on the processed image and the reference image being compared. The patent recognizes that in certain regions of the glazing, it may be difficult to determine the illumination value. The patent thus describes that the illumination value in these regions is estimated using the known illumination values of adjacent measurement points. Thus, in those areas of the glazing where the illumination value is difficult to ascertain, an illumination value is nevertheless used, but the illumination value is an estimated illumination value.

The method described in Guering does not involve omitting the area of reduced light transmission from the array of measurement points. Quite the contrary, in those areas of the glazing where the illumination value is difficult to ascertain, Guering specifically calculates/determines an estimated illumination value.

It is understood from the comments in the Official Action that the regions of the glazing in Guering where direct measurement of the illumination is prohibited can be interpreted to be an area of reduced light transmission that is omitted from the array of measurement points. A similar position was advanced during prosecution of

U.S. Patent No. 7,528,945. Applicants once again do not share the Examiner's view on this point. Nevertheless, as was done during prosecution of the application which issued as U.S. Patent No. 7,528,945, the wording in Claim 10 is clarified to better define that which the original claim language recites, namely that the method here involves omitting from the array of measurement points the at least one area of reduced light transmission and ignoring the optical quality of the glazing in the area of reduced light transmission. This is discussed, for example, near the bottom of page three of the present application.

Quite clearly, the method disclosed in Guering does not ignore the optical quality of the glazing in the regions where measurement of the illumination value is prohibited. Rather, as mentioned above, Guering specifically seeks to provide an estimated illumination value for such regions. Further, the other reference relied upon in the Official Action, U.S. Application Publication No. 2004/0174519 to Gahagan does not discuss omitting an area of reduced light transmission from the array of measurement points and ignoring the optical quality of the glazing in the area of reduced light transmission. Claim 10 is thus allowable.

New independent Claim 22 defines that the method involves illuminating the glazing with a light source to form a shadowgraph image of the glazing on a virtual image plane, wherein the virtual image plane is located between the light source and a linescan camera, and the glazing moves relative to the linescan camera during the illuminating of the glazing to form the shadowgraph image. The method also involves focusing the linescan camera onto the virtual image plane, measuring the illumination of the glazing at a plurality of measurement points arranged in an array extending over the glazing, and determining any deviation in illumination at those

measurement points from a desired value at each measurement point to determine the optical quality of the glazing.

The method recited in new independent Claim 25 comprises illuminating the glazing with a light source under ambient light conditions to form a shadowgraph image of the glazing on a virtual image plane located between the light source and a camera, focusing the camera onto the virtual image plane, measuring the illumination of the glazing at a plurality of measurement points arranged in an array extending over the glazing, and determining any deviation in illumination at those measurement points from a desired value at each measurement point to determine the optical quality of the glazing.

These claimed methods recited in these two new independent claims differs significantly from the method described in Guering. In one respect, Guering's method involves a glazing that is static and illuminated as a whole by a light source some distance away. An areascan or matrix camera mounted above or below the glazing captures the entire shadowgraph at one time, using a relatively long exposure (perhaps around 100 msec). The acquired image exhibits intensity fluctuations directly related to optical power in the glass; negative power causes a drop in intensity while positive power causes an increase in intensity. Based on these intensity values, it is possible to calculate the optical power at all points on the glazing using an equation that combines the shadowgraph intensity, the background intensity (without the glazing in place) and the transmission of the glazing. Correct intensities must be used because any contribution from fluorescent tubes and ambient lighting will introduce an error into the calculation. Since the camera captures an image from a large area white target screen which is not enclosed, the measurement must be made in a darkened environment. Even light from the

projector that scatters off the target screen and off the walls of the room can contribute an error and provide inaccurate results. So a dark room or other darkened environment (e.g., walls painted matte black) is required to reduce this as much as possible.

On the other hand, as discussed in the present application at, for example, the second full paragraph on page two and the first full paragraph on page six, the method here can be implemented in ambient light conditions as set forth in Claim 25. As noted, it is not possible to perform Guering's method in ambient light conditions as this would adversely affect the results. In addition, the method here as recited in Claim 22 is performed with a moving glazing and with use of a linescan camera as discussed in the second-to-last paragraph of page eleven of the application and near the bottom of page five of the application. As mentioned above, Guering specifically uses an areascan camera and the glazing must be stationary.

It is respectfully submitted that new independent Claims 22 and 25 are also allowable.

The dependent claims define additional distinguishing features associated with the claimed method here. These claims depend from allowable independent claims and so a detailed discussion of the additional distinguishing aspects of the invention recited in these dependent claims is not set forth at this time.

Early and favorable action concerning this application is respectfully requested.

Should any questions arise in connection with this application or should the Examiner believe that a telephone conference with the undersigned would be helpful


in resolving any remaining issues pertaining to this application the undersigned respectfully requests that he be contacted at the number indicated below.

Respectfully submitted,

BUCHANAN INGERSOLL & ROONEY PC

Date: July 6, 2009

By:

A handwritten signature in black ink, appearing to read "Matthew L. Schneider", written over a horizontal line.

Matthew L. Schneider
Registration No. 32814

Customer No. 21839
703 836 6620